



Philadelphia Refinery

**Philadelphia Energy Solutions
Refining and Marketing LLC**
3144 Passyunk Avenue
Philadelphia, PA 19145-5299
215-339-2000

Certified Mail: 7002 0460 0003 1936 6892

January 24, 2014

Director, Air Enforcement Division
Office of Civil Enforcement
U. S. Environmental Protection Agency
Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460-0001

**RE: USA v. Sunoco, Inc. et. al. - Civil Action No. 05 CV-02866
Philadelphia Energy Solutions Refining and Marketing LLC
Philadelphia Refinery
Semi-Annual Progress Report – 2013 July - December**

Dear Sirs:

Pursuant to Paragraph #114 of the Consent Decree entered in the above noted Civil Action, enclosed is Philadelphia Energy Solutions Refining and Marketing LLC's (PESRM) semi-annual progress report, the sixteenth report for this facility and the second under full PES ownership. The people on the carbon copy list inadvertently were not sent the prior report, so copies of that report are also included with this report.

On September 8, 2012, PESRM acquired the Philadelphia Refinery Property from Sunoco. On August 17, 2012, a Fourth Amendment to the CD was lodged in the US District Court for the Eastern District of Pennsylvania requiring the transfer of all provisions of the CD as they apply to the Philadelphia Refinery to PESRM as of the Date of Entry. The Fourth Amendment was entered on April 18, 2013.

Should you have any questions concerning the enclosed report, please contact me at 215-339-2074.

Sincerely,

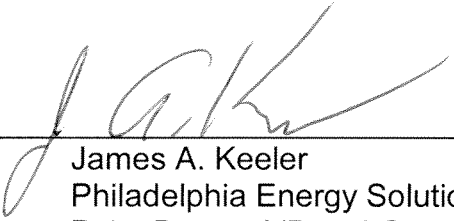
A handwritten signature in black ink, appearing to read 'Charles D. Barksdale Jr.'.


Charles D. Barksdale Jr.
Philadelphia Energy Solutions Refining and Marketing LLC
Site Environmental Director

January 24, 2014
Director, Air Enforcement Division
Office of Civil Enforcement
U. S. Environmental Protection Agency
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**RE: USA v. Sunoco, Inc. et. al. - Civil Action No. 05 CV-02866
Philadelphia Energy Solutions Refining and Marketing LLC
Philadelphia Refinery
Semi-Annual Progress Report #16 – 2013 July-December**

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my directions and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Signed:  Date: 1/27/14
James A. Keeler
Philadelphia Energy Solutions Refining and Marketing LLC
Point Breeze VP and General Manager

Signed:  Date: 1/22/14
Nithia Thaver
Philadelphia Energy Solutions Refining and Marketing LLC
Girard Point VP and General Manager

cc: Mr. James Rebarchak
Air Program Manager
Bureau of Air Quality
Southeast Regional Office
2 East Main St
Norristown PA 19401

Philadelphia Air Management Services
321 University Ave 2nd Floor
Philadelphia PA 19104

Email copies of CD Semi-Annual Report #16 to:

csullivan@matrixnewworld.com
fogarty.johnpac@epamail.epa.gov
foley.patrick@epamail.epa.gov

File: Global Settlement Periodic Reports 2013

Facility: Philadelphia

Report Title: Semi-annual Consent Decree Compliance Report #16/#2 (PES)

Reporting Period: 07/01/13 – 12/31/13

Paragraph 114 Reporting and Recordkeeping of Affirmative Relief / Environmental Projects and Emission Data in Section V with Certification

I. Progress Report for Implementation of (section V) Affirmative Relief/Environmental Projects

A. NOx Emissions Reductions from the FCCU

Paragraphs 12 – 13: There were no NOx exceedances of the CD limits during the period. As discussed in previous updates submitted in accordance with the amended CD (via email), Sunoco used Low NOx Combustion Promoter at the 868 FCCU for the first time on April 28, 2011 and the first time the Low NOx Combustion Promoter was added after the Date of Lodging of the Second Amendment was July 15, 2011. Quarterly email updates on the impact of the Low NOx Combustion Promoter were provided to the agencies. On February 18, 2013, PES submitted the final report on the 18 month study required by the Second Amendment. As part of that report and as required by the Second Amendment, PES established new NOx limits that were immediately affective:

7 day average: 100 ppmvd NOx (corrected to 0% oxygen)

365 day average: 50 ppmvd (corrected to 0% oxygen)

No exceedances of the 7 day average limit occurred since the establishment of the limit.

Compliance against the 365 day average limit will first be determined after 365 days, starting on February 19, 2014.

B. SO2 Emissions Reductions from the FCCU

Paragraphs 14 – 15: The Philadelphia Refinery is compliant with the requirements of these paragraphs. There were no SO₂ exceedances of the CD limits during the period.

C. Control of PM Emissions from FCCU

Paragraph 16 – The Philadelphia Refinery is compliant with the requirements of this paragraph.

D. Control of CO Emissions from FCCU

Paragraph 19 – There were no consent decree CO exceptions noted during the reporting period pursuant to paragraph 19. However, the 54 lbs/hour limit was exceeded for one hour (each day) on November 14, 2013 from a minor unit upset.

Paragraph 20 – Philadelphia Refinery is compliant with the requirements of this paragraph.

E. NSPS Subparts A and J Applicability at FCCU Regenerators

Paragraphs 24 – 25: There were no Subpart A or J exceptions during the reporting period. However, unplanned shutdowns and minor unit upsets led to five separate short duration elevated opacity events at the 868 FCCU during the reporting period. Opacity levels were above permit limits but all were below Subpart J levels.

F. NO_x Emission Reductions from Heaters and Boilers

Paragraph 31– On September 8, 2012, Philadelphia Energy Solutions (PES) acquired the Philadelphia Refinery Property from Sunoco. On August 17, 2012, a Fourth Amendment to the CD was lodged in the US District Court For The Eastern District Of Pennsylvania requiring the transfer of all provisions of the CD as they apply to the Philadelphia Refinery to PES as of the Date of Entry (April 13, 2013). This amendment will allow temporary backup operation of Boiler # 38 until August 31, 2014. All other works relative to the heater/boiler NO_x requirements has been completed. PES has not operated Boiler #38 and has decided to not operate it.

G. SO₂ Emissions Reductions from and NSPS Applicability for Heaters and Boilers

On December, 31, 2010, all refinery heaters and boilers became subject to NSPS J. Sunoco submitted a plan approval application to Philadelphia Air Management Services to incorporate these limits into a permit. A draft of this permit was received in July, 2011 and a final permit was received September 23, 2011.

Paragraphs 36 – 38: In accordance with the Consent Decree Appendix D, all remaining refinery heaters and boilers became subject to NSPS Subpart J. No exceedances of these limits occurred during the reporting period.

All RICE equipments listed in paragraph 38A of the amended Consent Decree were either permanently removed or replaced with an equivalent electrical engine by December 31, 2011.

I. Sulfur Recovery Plants - NSPS Applicability

Paragraphs 40 – 47: The Philadelphia Refinery is compliant with the requirements of these paragraphs.

J. Hydrocarbon Flaring Devices

Paragraphs 48 – 50: The following is a summary of options the Philadelphia Refinery has elected to comply with regarding the CD NSPS requirements for flares.

Philadelphia Flares	Compliance Status
PB North Yard LPG Flare	NSPS. Have an approved AMP. Please note that a request to revise this approved AMP was submitted to USEPA and approved by them in April, 2010.
PB South Yard North Flare	NSPS. Operating and maintain a flare gas recovery system.
PB 867 Acid Gas Flare	NSPS. This is not currently a fuel gas combustion device. The purge and pilot gas is normally comprised of purchased natural gas. The purge and pilot gas can occasionally be refinery fuel gas, and during that time, that gas will be monitored to be compliant with Subpart J. The flare only receives non-routinely generated gases; process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions.
PB 867 SWS Gas Flare	NSPS. This is not currently a fuel gas combustion device. The purge and pilot gas is normally comprised of purchased natural gas. The purge and pilot gas can occasionally be refinery fuel gas, and during that time, that gas will be monitored to be compliant with Subpart J. The flare only receives non-routinely generated gases, process upset gases, fuel gas released as a result of relief valve leakage or gases released due to other emergency malfunctions.
GP 1231/1232 Flares	NSPS status began 12/31/2010. AMP submitted in July, 2010 and approved by EPA in June, 2011.
GP 433 Flare	NSPS status began 12/31/2010. AMP submitted in July, 2010 and approved by EPA in June, 2011.

K. Control of Acid Gas Flaring and Tail Gas Incidents

Paragraphs 51 – 63: Acid gas flaring computational methods have been in place since the DOE. There were no AG flaring events to note for this reporting period.

L. Control of Hydrocarbon Flaring Incidents

Paragraph 64: No Hydrocarbon Flaring Incidents occurred during this reporting period.

M. Benzene Waste NESHAP Program Enhancements

Paragraphs 65-77

1. **Relative to BWON training conducted over this semi-annual period, one employee was trained on how to properly collect benzene waste NESHAP samples.**
2. **The BWON exempted quantity was calculated to be, based on EOL sampling data, 0.07 MG for the third quarter and 0.04 MG for the fourth quarter of 2013. The 2013 annual BWON exempted quantity, based on EOL sampling is 0.25 MG. See Appendix I for EOL sampling results.**
3. **A revised BWON EOL Sampling Plan for the Philadelphia Refinery was submitted on December 30, 2008. This revised sampling plan was approved by the EPA on 01/22/09, which resulted in relocating end-of-line sampling point GP EOL-001 and adding sample point GP EOL-006.**

N. Leak Detection and Repair Program Enhancements

Paragraphs 78 – 89 and 91-92: The Philadelphia Refinery is compliant with the requirements of these paragraphs.

The Philadelphia Refinery did not meet the requirements for paragraph 90(b)(ii). Because of a scheduling error, one valve did not receive regular monitoring while placed on the repair of delay list for 1 month. Once this error was found, monthly monitoring continued for this valve.

No audits were conducted pursuant to Paragraph 80 during the reporting period.

All of the eight (8) corrective actions for audit findings identified in the 2012 LDAR Third Party Compliance Audit have been completed.

Information required under Paragraph 92(c) will be submitted in the first semiannual report of 2014 under 40 CFR 63.654.

O. Incorporation of Consent Decree Requirements into Federally Enforceable Permit(s)

Paragraphs 93 – 96: The Philadelphia Refinery is compliant with the requirements of these paragraphs. Please note that in March, 2011, the Refinery submitted a plan approval application to incorporate NSPS J requirements on all remaining refinery heaters, boilers and flares. A final permit was received from AMS on September 23, 2011. New permit limits for the 1232 FCCU required by the second CD amendment were incorporated into a draft plan approval that was issued as final by Philadelphia AMS on July 30, 2012.

Paragraph 99A (added as part of 4th Amendment): The Philadelphia Refinery is compliant with the requirements of this paragraph.

Paragraph 113A Fenceline Monitoring (added as part of 4th Amendment) – a consultant was hired to prepare the Fenceline Monitoring Plan that must be submitted to EPA and AMS by April 12, 2014 (360 days from Date of Entry of 4th Amendment).

II. Summary of (section V) Emissions Data

Included herein.

III. Description of Any Problems Anticipated with Meeting (section V) Requirements

None

IV. Additional Matters to be Brought to the Attention of EPA and the Appropriate Plaintiff/Intervenor

None

Paragraph 112 SUPPLEMENTAL AND COMMUNITY ENVIRONMENTAL PROJECTS (SCEP) AND STATE AND LOCAL ENVIRONMENTALLY BENEFICIAL PROJECTS (SLEBP) in Section VIII with Certification

I. Progress Report for Each SCEP or SLEBP (section VIII)

Paragraph 104: All required work was completed during the second half of 2011 and the SCR unit for the H-400 and H-401 heaters was in service on December 30, 2010. Some minor work post construction punch list work was completed in the first half of 2011 and some minor touch up painting was completed in the third quarter of 2011.

Paragraph 105: Completed

Paragraph 106: Completed

Paragraph 107: Completed

Paragraph 108: Completed

Paragraph 109: Completed

Paragraph 110: A cost report for the SCR unit for the H-400 and H-401 heaters was submitted in January 2012.

II. Completed SCEP or SLEBP (section VIII)

A. Detailed Description of Each SCEP or SLEBP Project as Implemented

None

B. Brief Description of Any Significant Operating Problems Encountered

None

C. Certification That Each Project Has Been Fully Implemented Pursuant to the Provisions of this Consent Decree

If applicable, see the certification behind the cover letter.

D. Description of the Environmental and Public Health Benefits Resulting From Implementation of Each Project (including quantification of the benefits and pollutant reductions, where practicable)

N/A

Philadelphia Refinery

1. CD Paragraph 77(B)(i)(3) Sampling Results Philadelphia Refinery

Sample Point ID	Sample Date	Benzene Conc (ppmw)	Avg 3rd Qtr 2013 Benzene Conc. (ppmw)	Avg 4th Qtr 2013 Benzene Conc. (ppmw)	3rd Qtr 2013 Flow (gal)	4th Qtr 2013 Flow (gal)	3rd Qtr 2013 Benzene Quantity (Megagrams)	4th Qtr 2013 Benzene Quantity (Megagrams)
210 Box Cooler (PB EOL 001)	7/16/13	0.00099	0.00099		74235000		0.0003	0.002
	8/14/13	0.00099						
	9/10/13	0.00099						
	10/9/13	0.00099						
	11/12/13	0.016						
	12/11/13	0.00099						
Klondike Effluent (PB EOL 002)	7/17/13	0.00099	0.00099		10000000		0.00004	0.0002
	8/14/13	0.00099						
	9/10/13	0.00099						
	10/9/13	0.00099						
	11/12/13	0.013						
	12/11/13	0.00099						
867 Effluent (PB EOL 003)	7/17/13	1.4	0.5		22625000		0.04	0.00009
	8/14/13	0.00099						
	9/11/13	0.00099						
	10/10/13	0.002						
	11/13/13	0.001						
	12/12/13	0.00099						
*PB Grit Chamber Effluent (PB EOL 004)								

*No samples taken this period - not required. Grit chamber samples were only required to be sampled for one quarter and this had already occurred in early 2008.

*No samples taken this period - not required. Grit chamber samples were only required to be sampled for one quarter and this had already occurred in early 2008.

* Groundwater system not operational the entire six month period.

No waste was generated during the sampling point during the sampling.

3rd Qtr 2013 EOL Sampling TAB = 0.07 Megagrams
4th Qtr 2013 EOL Sampling TAB = 0.04 Megagrams

Annual 2013 EOL sampling TAB = 0.25 Megagrams

Notes:

- 1. Benzene concentrations listed as 0.00099 ppm were reported by the laboratory as < 0.001 ppm which is the detection limit.*
- 2. Average quarterly benzene concentrations are simply the arithmetic mean of the individual laboratory results for the quarter.*
3. Sample calculation of 3rd Qtr Benzene Quantity for GP EOL 002:

3rd Qtr avg benzene conc. = 2.3 ppm
3rd Qtr flow = 3,450,000 gallons

So: $\frac{2.3 \text{ ppm benzene} \times 3,450,000 \text{ gallons} \times 8.34 \text{ lbs/gallon}}{2204.6 \text{ lbs/megagram} \times 1,000,000 \text{ parts per million}} = 0.03 \text{ Megagrams}$